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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte HIRONORI KAKIUCHI and HIROYASU INOUE

Appeal 2009-014760
Application 10/764,805
Technology Center 1700

Before TERRY J. OWENS, TONI R. SCHEINER, and MARK NAGUMO
Administrative Patent Judges.

OWENS, *Administrative Patent Judge.*

DECISION ON APPEAL
STATEMENT OF THE CASE

The Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's rejection of claims 1-25, which are all of the pending claims. We have jurisdiction under 35 U.S.C. § 6(b).

The Invention

The Appellants claim an optical recording medium. Claim 1 is illustrative:

1. An optical recording medium comprising:
a substrate;

a reflective layer;
a light transmission layer; and
at least one recording layer positioned between the reflective layer and the light transmission layer, the recording layer being of the type in which data can be recorded by projecting a laser beam, the recording layer including a first recording film containing an element selected from the group consisting of Si, Ge, Sn, Mg, In, Zn, Bi and Al as a primary component and a second recording film containing Cu as a primary component and 10 to 30 atomic % of Al as an additive,
wherein the element contained in the first recording film as a primary component and the element contained in the second recording film as a primary component are mixed upon irradiation with the laser beam, and
wherein the light transmission layer is disposed on the opposite side to the substrate with respect to the recording layer and one surface of the light transmission layer constitutes a light incidence plane through which the laser beam enters the optical recording medium.

The References

Morimoto	4,670,345	Jun. 2, 1987
Suzuki	6,033,752	Mar. 7, 2000
Shuy	2001/0021160 A1	Sep. 13, 2001
Shigeta (as translated)	JP 59-225992 A	Dec. 19, 1984
Yoshida (as translated)	JP 10-143919 A	May 29, 1998
Kinoshita (as translated)	JP 12-285509 A	Oct. 13, 2000
Aratani	EP 1 122 723 A1	Aug. 8, 2001
Hsu (as translated)	CN 1-330368 A	Jan. 9, 2002

The Rejections

Claims 1-25 stand rejected under 35 U.S.C. § 103 over either Hsu or Shuy, in view of Suzuki, Morimoto, Shigeta, Kinoshita and either Yoshida or Aratani.

OPINION

We affirm the rejections.

Issue

Have the Appellants indicated reversible error in the Examiner's determination that the applied prior art would have rendered *prima facie* obvious, to one of ordinary skill in the art, the use of Yoshida's or Aratani's Cu-Al reflecting layer composition as Shuy's reflecting layer composition?

Findings of Fact

Shuy discloses an optical recording medium comprising a transparent layer (30) adjacent to a reflecting layer (40) (¶¶ 0026-27; Figs. 2A, 2B). The transparent layer (30) and the reflecting layer (40), when heated by a light beam (70), react to form a semi-transparent reflective area (35) which is an alloy and/or compound of the transparent layer (30) and the reflecting layer (40) (¶ 0028; Figs. 2A, 2B). The disclosed transparent layer (30) materials, which can be used in combination, include Si and Ge (which are two of the Appellants' first recording film materials), and the disclosed reflecting layer (40) materials, which can be used as alloys or combinations thereof, include Cu and Al (which are the components of the Appellants' second recording film) (¶¶ 0026-27).¹

Yoshida discloses an optical recording medium having a reflective film (3) which is made of an alloy of 70-99 at% Cu and 1-30 at% Al and has high reflectance and corrosion resistance (¶¶ 0001, 0017).

Aratani discloses an optical recording medium having a reflective film (3) which can be a Cu-Al alloy containing greater than 5 to less than 40 at% Al (¶¶ 0001, 0050; Table 2).

¹ We do not discuss Hsu because the relevant disclosures therein are essentially the same as those of Shuy.

Analysis

The Appellants argue that “even if the transparent layer 30 and the reflecting layer 40 [of Shuy] could somehow be considered analogous to the first recording film and the second recording film of the at least one recording layer as recited in independent claim 1” (Br. 34), neither Yoshida nor Aratani discloses a reflecting layer that mixes with Si or Ge contained in a transparent layer upon irradiation with a light beam to form a reflective area (Br. generally, e.g., pp. 34-37).

“A person of ordinary skill is also a person of ordinary creativity, not an automaton.” *KSR Int’l. Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007). In making an obviousness determination one “can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR*, 550 U.S. at 418. Shuy’s indication that the reflecting layer (40) can be an alloy of Cu and Al (¶ 0028) would have led one of ordinary skill in the art, through no more than ordinary creativity, to use alloys of Cu and Al known in the art to be suitable as optical recording medium reflecting layers such as those of Yoshida and Aratani. Because Shuy does not place any restriction on the relative amounts of Cu and Al in the alloy (¶ 0027), one of ordinary skill in the art would have had a reasonable expectation of success in using the Cu:Al ratios in Yoshida’s and Aratani’s alloys. *See In re O’Farrell*, 853 F.2d 894, 904 (Fed. Cir. 1988) (“Obviousness does not require absolute predictability of success For obviousness under § 103, all that is required is a reasonable expectation of success”). Moreover, Yoshida’s disclosure that Yoshida’s relative amounts of Cu and Al provide increased corrosion resistance (¶ 0017) would have

given one of ordinary skill in the art further incentive to use Yoshida's Cu-Al alloy as Shuy's reflecting layer (40) composition.

The Appellants argue regarding claims 20, 22 and 24 that the applied references do not teach or suggest a difference in the light transmittances of a mixed region and a region where the first and second recording films do not mix which is equal to or less than 3% for a laser beam having a wavelength of 380-450 nm (Br. 42-43, 46).

As pointed out by the Appellants, "such characteristic . . . is related to the structure claimed" (Br. 43). The ranges for the amount of Al in the Cu-Al alloy of Yoshida (1-30 at%; ¶ 0017) and Aratani (greater than 5 to less than 40 at%; ¶ 0050) encompass the Appellants' 10-30 at% range. Also, the Si or Ge composition of Shuy's transparent layer (30) with which Shuy's reflecting layer (40) mixes can be the same as that of the Appellants' first recording film (Shuy, ¶ 0026). The light transmission difference recited in the Appellants' claims 20, 22 and 24 is merely a property of the combination which would result when Shuy's transparent layer (30) is Si or Ge and Shuy's reflecting layer is the Cu-Al alloy of Yoshida or Aratani containing 10-30 at% Al. *See In re Papesch*, 315 F.2d 381, 391 (CCPA 1963) ("From the standpoint of patent law, a compound and all of its properties are inseparable; they are one and the same thing.")

Conclusion of Law

The Appellants have not indicated reversible error in the Examiner's determination that the applied prior art would have rendered *prima facie* obvious, to one of ordinary skill in the art, the use of Yoshida's or Aratani's Cu-Al reflecting layer composition as Shuy's reflecting layer composition.

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Application 10/764,805

DECISION/ORDER

The rejection of claims 1-25 under 35 U.S.C. § 103 over either Hsu or Shuy, in view of Suzuki, Morimoto, Shigeta, Kinoshita and either Yoshida or Aratani is affirmed.

It is ordered that the Examiner's decision is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED

tc

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